CATERPILLAR

Service Manual

308 MINI HYD EXCAVATOR

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Product: MINI HYD EXCAVATOR
Model: 308 MINI HYD EXCAVATOR GG8
Configuration: 308 CR Mini Hydraulic Excavator GG800001-UP (MACHINE) POWERED BY C3.3B Engine

Disassembly and Assembly
307.5, 308, 308.5, 309, and 310 Mini Hydraulic Excavator Machine Systems
Media Number -M0095130-08 **Publication Date -01/10/2020** **Date Updated -06/10/2020**

i07561403

Accumulator - Remove and Install

SMCS - 4263-010; 4331-010; 5077-010; 7336-010

S/N - GG81-UP

S/N - GG91-UP

S/N - GK81-UP

S/N - GW71-UP

S/N - GW81-UP

S/N - GW91-UP

S/N - GWT1-UP

S/N - GX81-UP

Removal Procedure

Table 1

Required Tools			
Tool	**Part Number**	**Part Description**	**Qty**
A	311-1362	Vacuum Gauge Gp	1

1. Release the hydraulic system pressure. Refer to Operation and Maintenance Manual, "System Pressure - Release."

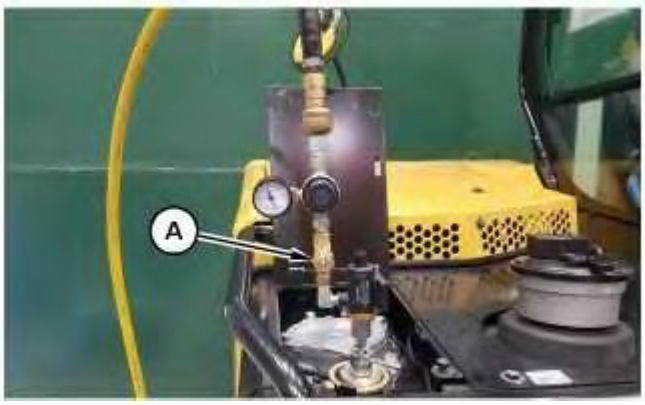

Illustration 1 g06452271

2. Install Tooling (A) onto the hydraulic tank. Attach an air supply hose onto Tooling (A). Apply 138 kPa (20 psi) to pull a vacuum on the hydraulic system.

Illustration 2 g06452259

3. Open door (1).

Illustration 3 g06359621

4. Remove accumulator (2).

Installation Procedure

1. Install accumulator (2) in the reverse order or removal.

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i07848380

Actuator Motor (Water Valve) - Remove and Install

SMCS - 7304-010-MQ

Removal Procedure

NOTICE

Care must be taken to ensure that fluids are contained during performance of inspection, maintenance, testing, adjusting, and repair of the product. Be prepared to collect the fluid with suitable containers before opening any compartment or disassembling any component containing fluids.

Refer to Special Publication, PERJ1017, "Dealer Service Tool Catalog" for tools and supplies suitable to collect and contain fluids on Cat® products.

Dispose of all fluids according to local regulations and mandates.

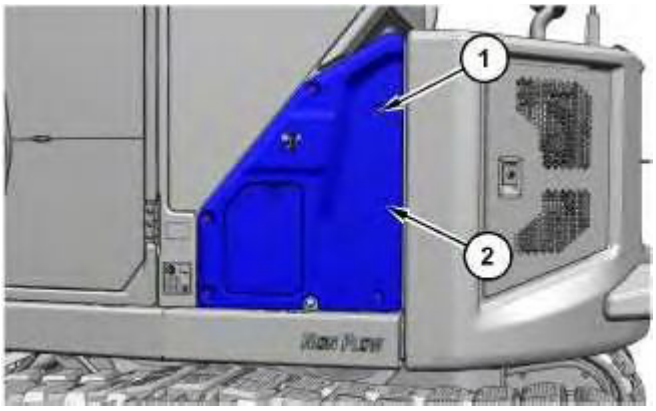

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Illustration 1 g06455132

1. Remove bolts (1) and cover assembly (2).

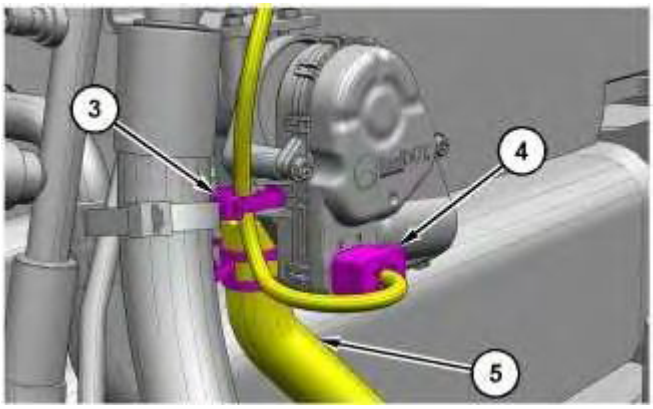

Illustration 2 g06455133

2. Remove cable strap (3) and disconnect harness assembly (4).
3. Disconnect hose (5).

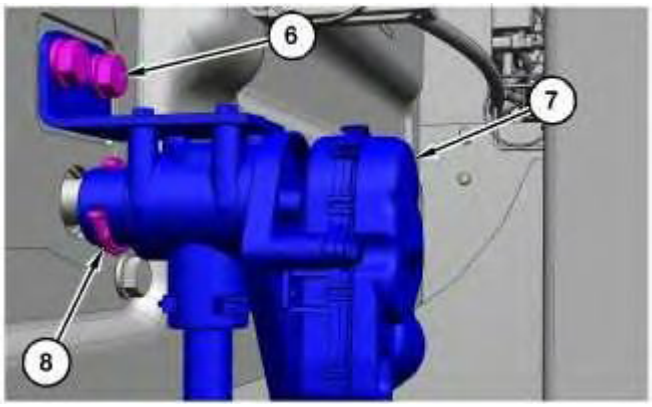

Illustration 3 g06455134

4. Remove clip (8).
5. Remove bolts (6) and actuator valve (7).

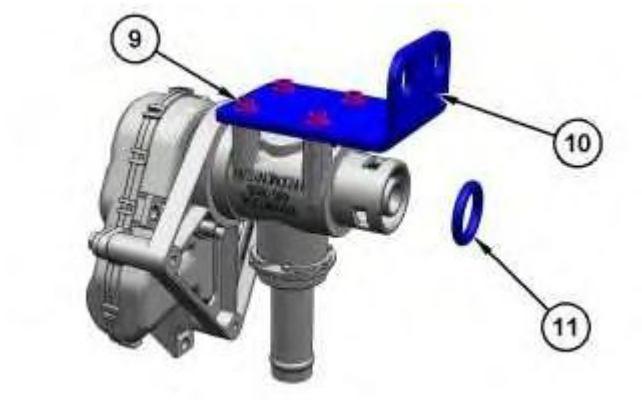

Illustration 4 g06455135

6. Remove O-ring seal (11).
7. Remove screws (9) and mounting plate (10).

Installation Procedure

Table 1

Required Tools			
Tool	**Part Number**	**Part Description**	**Qty**
A	465-7614	Clip	1
B	-	Silicone Dielectric lubricant	-

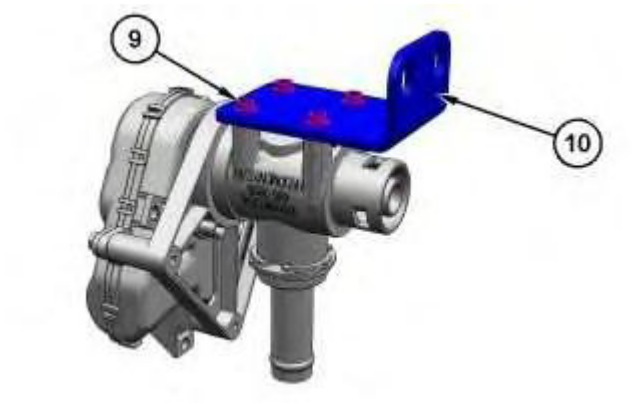

Illustration 5 g06455179

1. Install mounting plate (10) and screws (9).

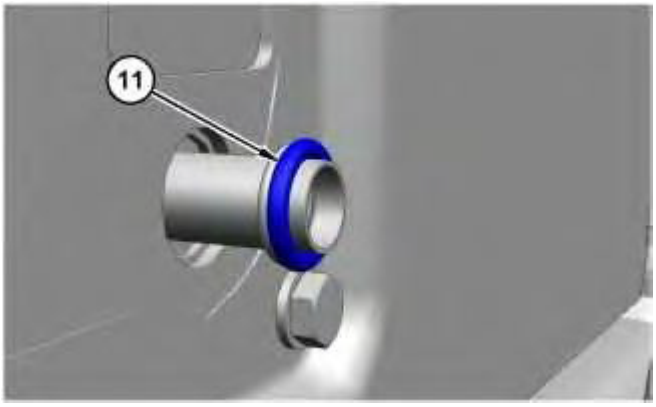

Illustration 6 g06455180

2. Apply Tooling (B) to O-ring seal (11). Install O-ring seal (11) onto the conditioner tube.

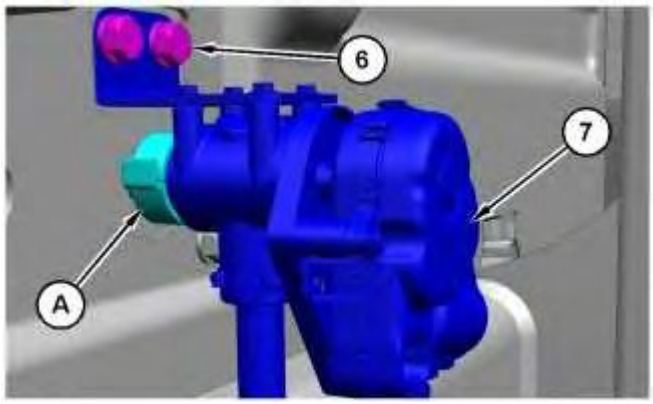

Illustration 7 g06455181

3. Install Tooling (A) onto actuator valve (7). Install actuator valve (7).
4. Install bolts (6). Tighten bolts (6) to a torque of 15 ± 3 N.m (133 ± 27 lb in).

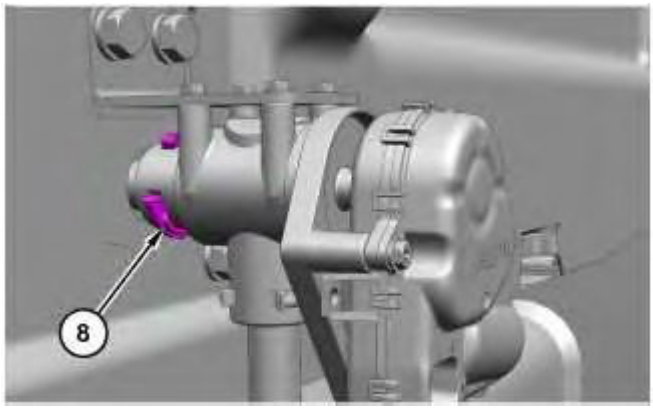

Illustration 8 g06455183

5. Remove Tooling (A) and install clip (8).

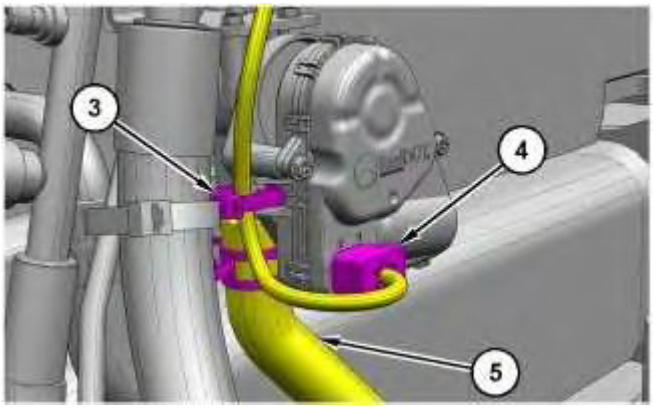

Illustration 9 g06455133

6. Connect hose (5).
7. Connect harness assembly (4) and install cable strap (3).

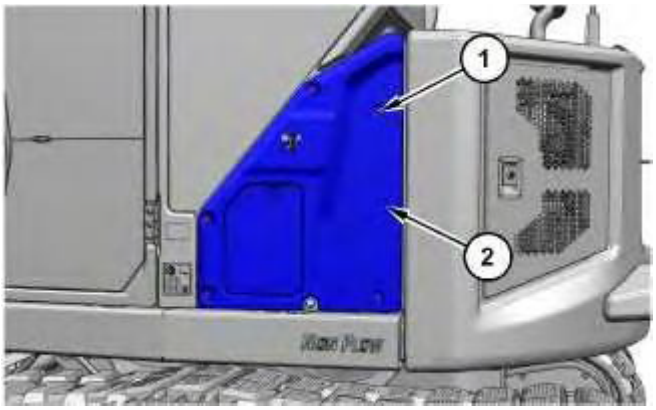

Illustration 10 g06455132

8. Install cover assembly (2) and bolts (1).

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i07550771

Blower Motor (Air Conditioner, Heater) - Remove and Install

SMCS - 7304-010-BW; 7309-010-BW; 7320-010-BW

S/N - GG81-UP

S/N - GG91-UP

S/N - GK81-UP

S/N - GW71-UP

S/N - GW81-UP

S/N - GW91-UP

S/N - GWT1-UP

S/N - GX81-UP

Removal Procedure

Start By:

a. Remove the hydraulic lockout control

b. Remove the joystick control assembly

c. Remove the seat

1. Turn the battery disconnect switch to the OFF switch.

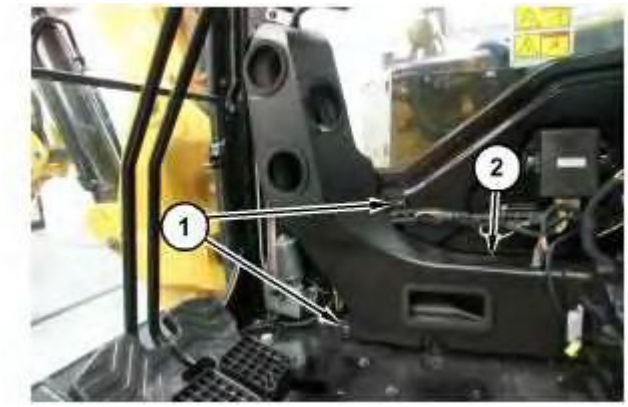

Illustration 1 g06357269

2. Remove screws (1) and duct assembly (2).

Illustration 2 g06357274

3. Remove screws (3) and duct assembly (4).

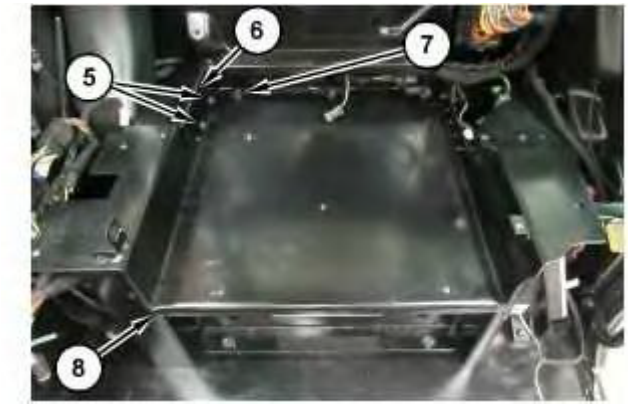

Illustration 3 g06357287

4. Remove bolts (5) and panel (6).
5. Remove five bolts (7) and panel (8).

Illustration 4 g06357290

6. Remove screw (9) and duct (10).

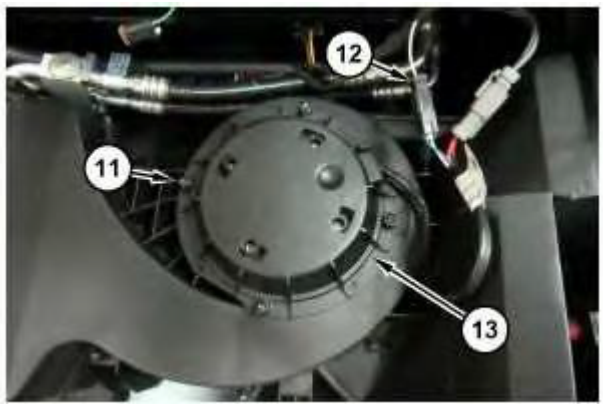

Illustration 5 g06456128

7. Remove four screws (11).
8. Disconnect harness assemblies (12).
9. Remove blower motor (13).

Installation Procedure

1. Install blower motor (13) in the reverse order of removal.

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i07815246

Boom - Remove and Install

SMCS - 6501-010

Removal Procedure

Table 1

Required Tooling			
Item	**Part Number**	**Part Description**	**Qty**
A	422-2352	Jack Stand Gp	1
B	452-6006	Grease	1

WARNING

Personal injury can result from hydraulic oil pressure and hot oil.

Hydraulic oil pressure can remain in the hydraulic system after the machine has been stopped. Serious injury can be caused if this pressure is not released before any service is done on the hydraulic system.

Make sure all the attachments have been lowered, and the oil is cool, before removing any components or lines. Remove the oil filler cap only when the filler cap is cool enough to touch with your bare hand.

Start By:

a. Remove the stick cylinder.

b. Remove the stick.

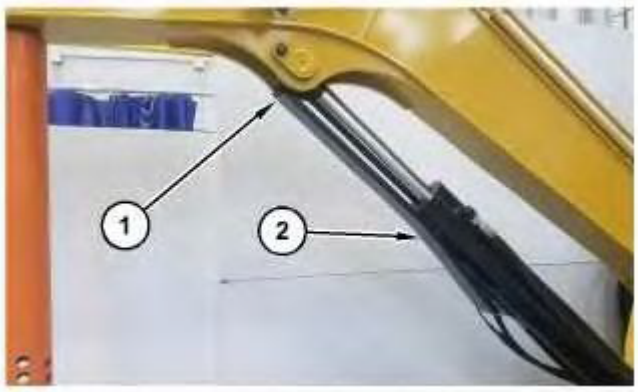

Illustration 1 g06415474

1. Remove bolt (1) and guard (2).

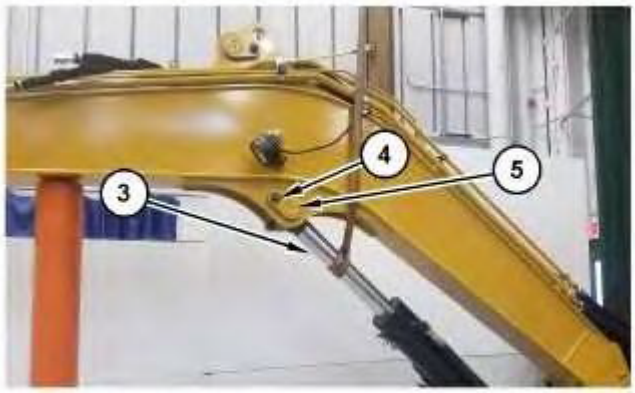

Illustration 2 g06415502

2. Attach a suitable lifting device to the rod end of boom cylinder (3).
3. Remove bolt (4) and pin assembly (5).

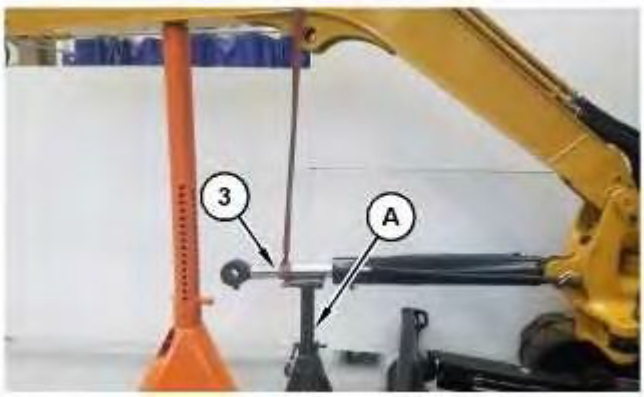

Illustration 3 g06415563

4. Lower the rod end of the boom cylinder (3) onto Tooling (A).

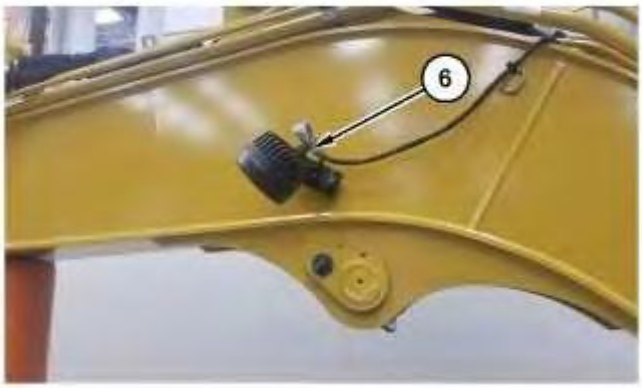

Illustration 4 g06415582

5. Disconnect harness assembly (6). Repeat for the opposite side of the boom.

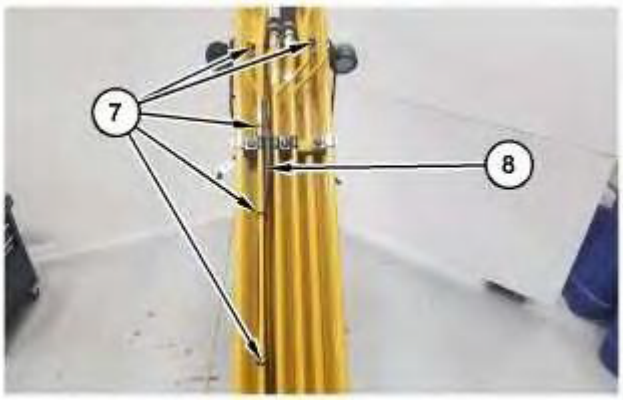

Illustration 5 g06415646

6. Cut cable straps (7).
7. Position harness assembly (8) out of the way.

Illustration 6 g06415666

Note: Note the orientation of hose assemblies (9) for installation purposes.

8. Disconnect hose assemblies (9).

Illustration 7 g06415741

Note: Note the orientation of hose assemblies (10) for installation purposes.

9. Disconnect hose assemblies (10).

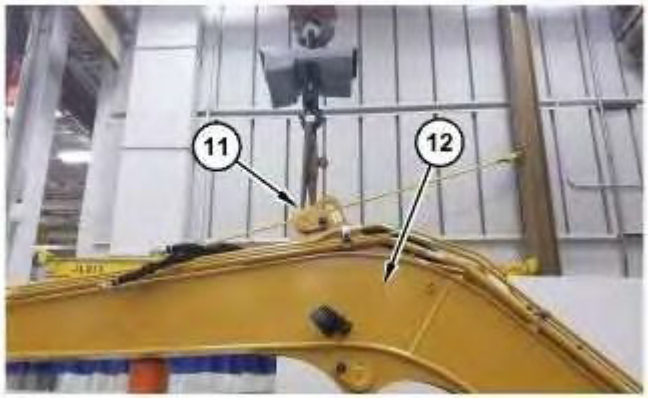

Illustration 8 g06415880

10. Attach a suitable lifting device to pin assembly (11) on top of boom (12).

    The weight of the boom is approximately 458 kg (1010 lb).

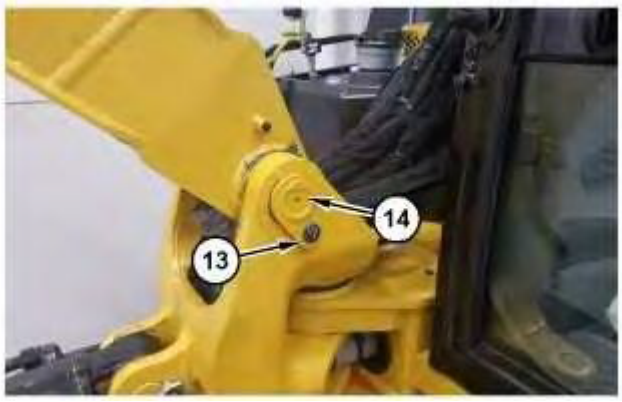

Illustration 9 g06415882

Note: Note the number of shims for installation purposes.

11. Remove bolt (13), pin assembly (14), and the shims.

Illustration 10 g06415883

12. Remove boom (12).

Installation Procedure

1. Install boom (12) in the reverse order of removal.
    a. Install the shims as required to adjust lateral clearance to 0.6 mm (0.024 inch).
    b. Coat all bores and sealing lips with Tooling (B) prior to assembly. After assembly lubricate all joints from the joint fittings.

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i08268682

Boom Cylinder - Assemble

SMCS - 5456-016

Assemble

Table 1

Required Tools			
Tool	**Part Number**	**Part Description**	**Qty**
A	152-4251	Repair Bench	1
B	4C-8092	Hydraulic Torque Wrench Gp	1
C	162-7189	Adapter Plate	1
D	9U-7868	Spanner Wrench	1

Illustration 1 g06518591

1. Install O-ring seal (20).

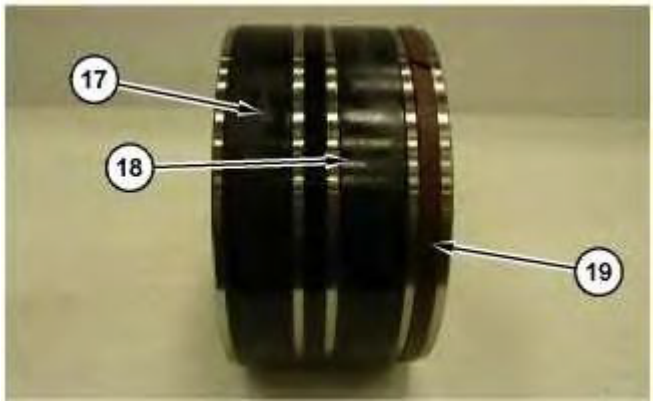

Illustration 2 g06518590

2. Install wear ring (17), (18), and (19).

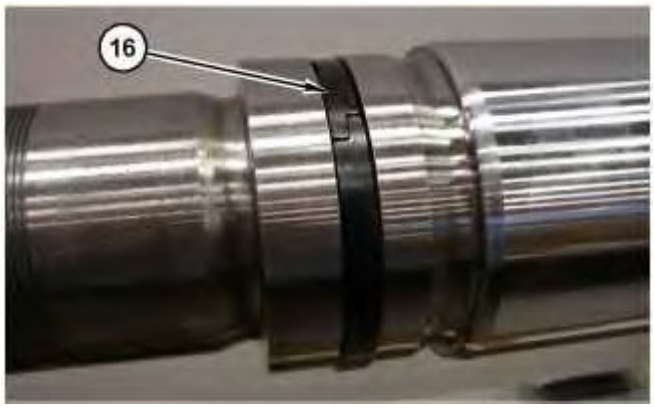

Illustration 3 g06518588

3. Install seal (16).

Illustration 4 g06518583

4. Install snubber (15).

Illustration 5 g06518580

5. Install piston (14).

Illustration 6 g06517039

6. Install nut (13)

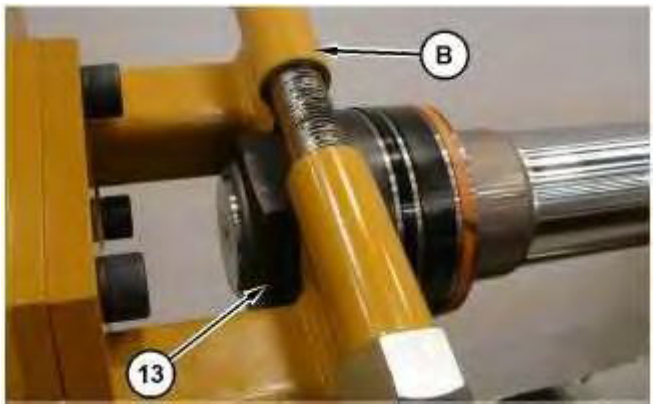

Illustration 7 g06518241

7. Use Tooling (B) to tighten nut (13). Refer to Table 2 for the correct torque specification.

Table 2

Piston Nut Size	Piston Nut Torque Specification

M45	2058 ± 80 N·m (1518 ± 60 lb ft)
M50	2865 ± 142 N·m (2113 ± 105 lb ft)
M52	3000 ± 165 N·m (2213 ± 122 lb ft)
M56	4000 N·m (2950 lb ft)

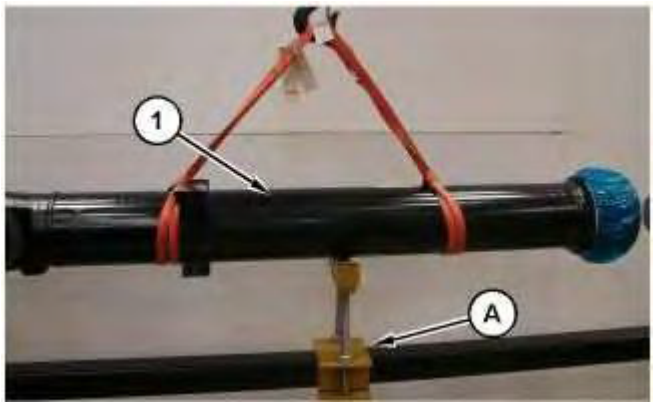

Illustration 8 g06517032

8. Use a suitable lifting device to install boom cylinder (1) on to Tooling (A).

Illustration 9 g06516936

9. Install seals (12).

Illustration 10 g06516920

10. Install seal (11).

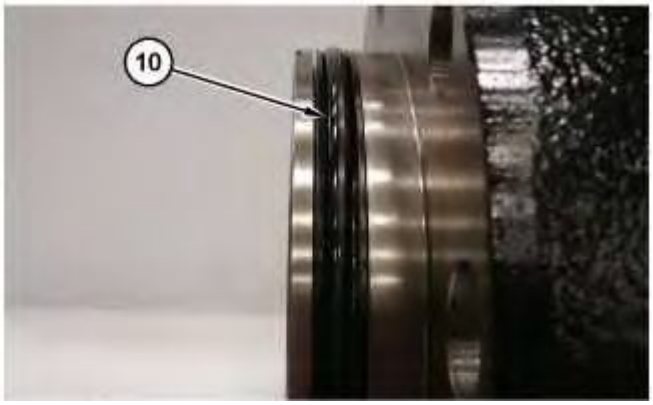

Illustration 11 g06516916

11. Install O-ring seal (10).

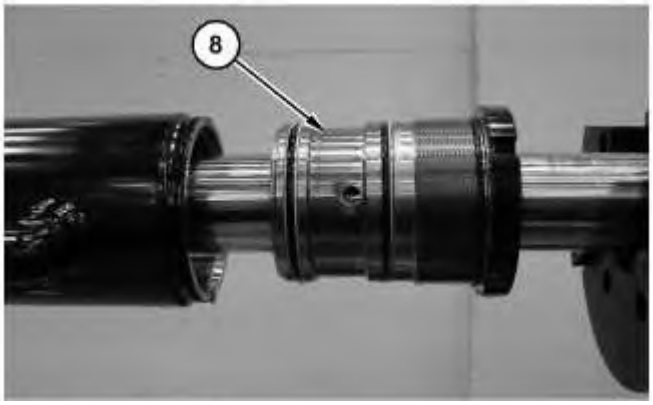

Illustration 12 g06608389

12. Install cylinder head (8) onto cylinder rod (9).

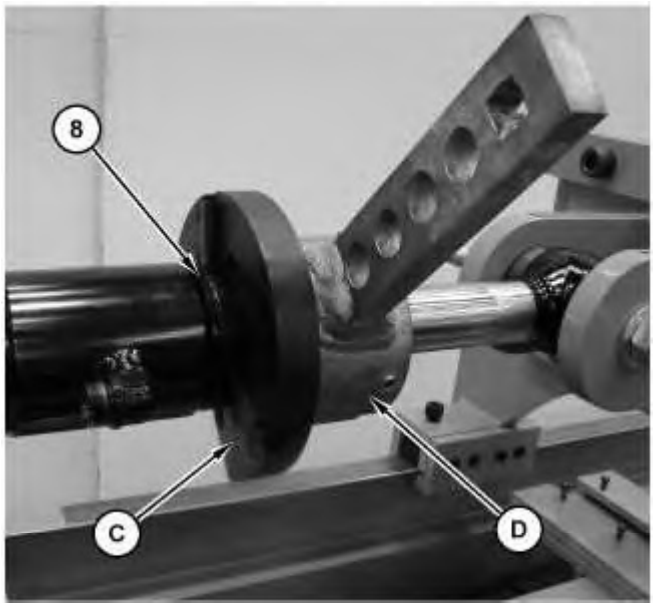

Illustration 13 g06608394

13. Use Tooling (C) and Tooling (D) to tighten cylinder head (8). Refer to Table 3 for the correct torque specification for cylinder head (8).

Table 3

Cylinder Head Size	Cylinder Head Torque Specification
M100	550 ± 50 N·m (406 ± 37 lb ft)
M105	650 ± 65 N·m (480 ± 48 lb ft)
M115	850 ± 90 N·m (627 ± 66 lb ft)
M120	900 ± 90 N·m (664 ± 66 lb ft)
M125	1020 ± 100 N·m (752 ± 74 lb ft)

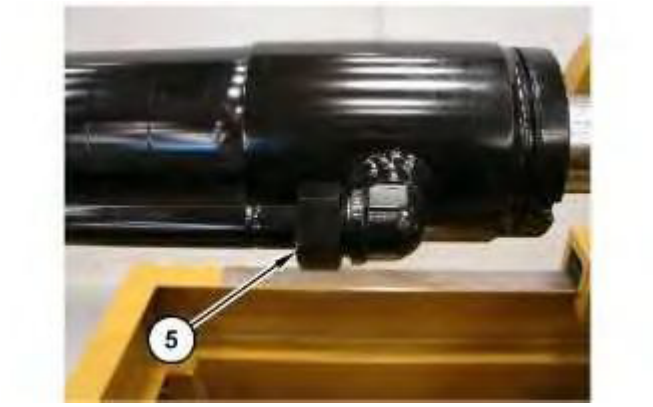

Illustration 14 g06608405

14. Install tube assembly (5). Tighten tube assembly (5) to a torque of 110 ± 10 N·m (8 ± 7 lb ft).

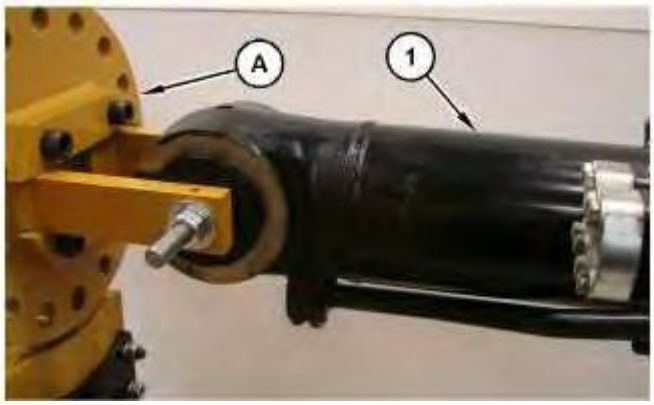

Illustration 15 g06516435

15. Attach a suitable lifting device to boom cylinder (1) and remove from Tooling (A). Boom cylinder (1) weighs approximately 88 kg (195 lb).

Install the boom cylinder

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i08033517

Boom Cylinder - Disassemble

SMCS - 5456-015

Disassemble

Start By:

a. Remove the Boom Cylinder

Table 1

Required Tools			
Tool	**Part Number**	**Part Description**	**Qty**
A	152-4251	Repair Bench	1
B	4c-8092	Hydraulic Torque Wrench Gp	1
C		link bracket	1

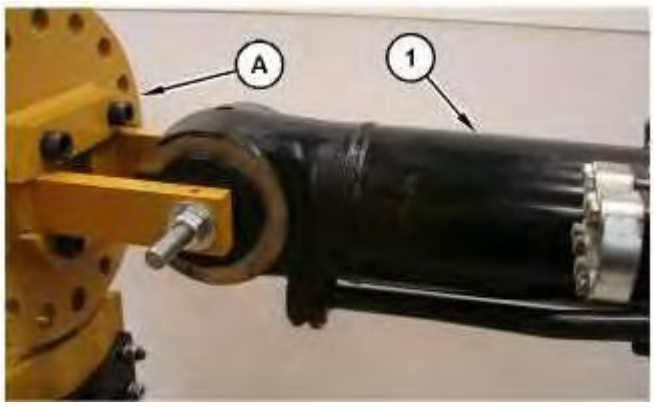

Illustration 1 g06516435

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